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EXAMINER	
AHMED, SALMAN	

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2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/083,128	BAVANT ET AL.
	Examiner	Art Unit
	Salman Ahmed	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 12/29/2006.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,2 and 4-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1, 2 and 4-17 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 5/30/2002 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1, 2 and 4-17 are pending.

Claim 3 has been cancelled by the Applicant.

Claims 1, 2 and 4-17 are rejected.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 4-8, 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cai et al. (US PAT 6134246, hereinafter Cai) in view of Counterman

(US PAT 6222858), Morikawa et al. (US PAT 6061354, hereinafter Morikawa) and Agarwal (US PAT 6963570).

In regards to claim 1, Cai teaches a method for conveying data between at least two users having a connection in a communications network (Figures 4, 5 and 6, ATM network) comprising one or more arteries working at standard bit rates (Figures 4, 5 and 6, T1 communication links 40), a basic transmission unit (Figures 4, 5 and 6, transmitter 220), at least two adaptation units (Figure 5, elements 310 and 320), and at least one adaptation layer protocol (column 5 line 53, AAL5), the data to be transmitted taking the form of packets (ATM cells), the method comprising upstream from the artery at an adaptation unit assigned to an originating user, collecting data from the originating user (column 5 lines 25-29, ATM cells received over an incoming high bandwidth communication link 30, such as a OC-3); forming a Common Part Sublayer packet comprising the packet of application data (AAL5 packet); inserting the Common Part Sublayer packet (AAL5 packet) into a basic transmission unit (AAL5 packet) at a rate of one packet per unit and sending unit through a network to a first end of the artery (column 5 lines 53-56, If the assemble packet is a "good" packet, the SAR module 310 then interrupts an associated central processing unit (CPU) 320 and places the assembled AAL5 packet into a first designated memory location 340); at the first end of the artery, extracting multiple Common Part Sublayer packets from basic transmission units (AAL5 packets) received from different originating users and multiplexing packets in a basic transmission unit of a virtual circuit set up between the first end and a second end of the artery according to the adaptation layer protocol; sending the basic

transmission unit of the virtual circuit from the first end to the second end of the artery (columns 5-6 lines 40-2, The PDU or AAL5 packet with the sequence number stored therein is then communicated back down to the SAR module 310. The SAR module 310 de-assembles the user packet into a number of ATM cells and communicates all of the de-assembled ATM cells associated with the particular user packet over the selected T-1 communication link 40); at the second end of the artery, receiving the basic transmission unit of the virtual circuit and extracting the Common Part Sublager packets from unit by demultiplexing the packets from unit; determining the connection to which each of the Common Part Sublayer packets belong and inserting each Common Part Sublayer packet into a basic transmission unit at a rate of one packet per unit for transmission to an addressee user (column 6 lines 7-11, A second application module 370 associated with the second SAR module 360 then reassembles the received ATM cells into a PDU or AAL5 packet and places it in a designated memory location 380); sending basic transmission unit through a network downstream from the artery to an adaptation unit assigned to the addressee user; and at the adaptation unit assigned to the addressee user, extracting the Common Part Sublayer packet from the basic transmission unit (column 6 lines 10-20, A CPU 330 associated with the second ATM switch 50 re-sequences the received AAL5 or PDU packet with other packets received over other T-1 communication links and transmits them back down to the second SAR module 360. The second SAR module 360 then de-assembles the AAL5 packets into a number of ATM cells and utilize a routing table 390 to transmit the cells over an outgoing OC-3 communication link 60 in a conventional manner).

In regards to claim 1, Cai does not explicitly teach each link between the two atm nodes have different bit rates (higher and lower).

Counterman in the same field of endeavor teaches links can be of variable rate between the atm nodes (Table 1, column 1 lines 8-10 and column 6 lines 34-47, inverse multiplexing for Asynchronous Transfer Mode ("ATM") over communication links with different transmission rates and/or delays. The flows 254 in an IMA group may have different nominal cell rates, but have the same nominal cell transfer delay, in order for the corresponding IMA virtual link 250 to meet the desired QoS objective. A link 258 carries one or more flows over a physical path between inverse multiplexers. An IMA link transmitter provides one or more flows from an IMA sublayer to the physical layer. The physical layer functions are grouped into the TC layer and the Physical Media Dependent (PMD) sublayer. Each IMA sublayer flow matches the ATM transfer characteristic (e.g., cell delay and rate) provided by the physical layers at each end of a link. A link's physical layer will process received ATM cells to provide one or more flows from the physical layer to the IMA sublayer).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai's system/method by incorporating the steps of atm nodes using different rates at different links for cell transmission as suggested by Counterman. The motivation is that being able to support multiple rates on multiple physical connections give flexibility to communicating nodes to meet their varying Qos requirements; thus making the system robust and efficient.

In regards to claim 1, Cai and Counterman do not explicitly teach packets having a size smaller than the size of the basic transmission unit and multiplexing packets of different originating users.

Morikawa in the same field of endeavor teaches (column 1, lines 19-21 and 37-41) methods for loading a standard ATM cell with multiplexed connections in the form of micro-frames including data shorter than the standard ATM cell. Provide a concrete configuration of a high speed multiplexed transmitter for loading standard ATM cells with a plurality of connections in the form of micro-frames including data shorter than the standard ATM cell.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai and Counterman's system/method by incorporating the steps of packetizing packets having a size smaller than the size of the basic transmission unit and multiplexing packets of different originating users as suggested by Morikawa. The motivation is that (as suggested by Morikawa, column 14 lines 32-45) the multiplex transmitters can achieve efficient multiplex transmission processing. In addition, it is possible to implement the processing with a minimum delay, and to achieve the multiplexing of micro-frames with different service qualities onto one ATM cell. Moreover, it is possible to improve the channel efficiency and to achieve finer transmission control for maintaining the quality by handling the standard ATM cells and the ATM cells loaded with the micro-frames in the same manner.

In regards to claim 1, Cai, Counterman and Morikawa do not explicitly teach converting data into coded frames using a compression algorithm.

Agarwal in the same field of endeavor teaches converting data into coded frames using a compression algorithm (columns 6-7 lines 54-11, The present invention specifically concerns an ALA Header Compression Algorithm (ALA-AHCA) that permits 4 octets of a standard 5-octet ATM cell header to be compressed to 2 octets before transmission over a link).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai and Counterman and Morikawa's system/method by incorporating the steps of converting data into coded frames using a compression algorithm as suggested by Agarwal. The motivation is that (as suggested by Agarwal, columns 6-7 lines 54-11) data compression can increase bandwidth of a link making the network more bandwidth efficient.

In regards to claim 17, Cai teaches network comprises at least two devices (Figure 3, ATM switches 20 and 50), with a first device positioned at a first end of a artery and a second device positioned at a second end of the artery (Figure 3, two ends of T-1 communication links), wherein, in multiplexed mode, the first device is adapted to use the packetization function to extract multiple packets from basic transmission units received from different originating users (column 5 lines 25-29, ATM cells received over an incoming high bandwidth communication link 30, such as a OC-3); multiplex packets in a basic transmission unit of a virtual circuit set up between tile first end and the second end of the artery; and send the basic transmission unit of the virtual circuit from the first end to the second end of the low-bit-rate artery (column 5 lines 53-56 and columns 5-6 lines 40-2, If the assemble packet is a "good" packet, the SAR module 310

then interrupts an associated central processing unit (CPU) 320 and places the assembled AAL5 packet into a first designated memory location 340. The PDU or AAL5 packet with the sequence number stored therein is then communicated back down to the SAR module 310. The SAR module 310 de-assembles the user packet into a number of ATM cells and communicates all of the de-assembled ATM cells associated with the particular user packet over the selected T-1 communication link 40); and wherein, in multiplexed mode, the second device is adapted to: receive the basic transmission unit of the virtual circuit; use the packetization function to extract the packets from unit by demultiplexing the packets from unit (column 6 lines 7-11, A second application module 370 associated with the second SAR module 360 then reassembles the received ATM cells into a PDU or AAL5 packet and places it in a designated memory location 380); determine the connection to which each of the packets belong; insert each packet into a new basic transmission unit at a rate of one packet per unit for transmission to an addressee user; and send said new basic transmission unit to the addressee user (column 6 lines 10-20, A CPU 330 associated with the second ATM switch 50 re-sequences the received AAL5 or PDU packet with other packets received over other T-1 communication links and transmits them back down to the second SAR module 360. The second SAR module 360 then de-assembles the AAL5 packets into a number of ATM cells and utilize a routing table 390 to transmit the cells over an outgoing OC-3 communication link 60 in a conventional manner).

In regards to claim 17, Cai does not explicitly teach each link between the two atm nodes have different bit rates (higher and lower).

In regards to claim 17 Counterman in the same field of endeavor teaches links can be of variable rate between the atm nodes (Table 1, column 1 lines 8-10 and column 6 lines 34-47, inverse multiplexing for Asynchronous Transfer Mode ("ATM") over communication links with different transmission rates and/or delays. The flows 254 in an IMA group may have different nominal cell rates, but have the same nominal cell transfer delay, in order for the corresponding IMA virtual link 250 to meet the desired QoS objective. A link 258 carries one or more flows over a physical path between inverse multiplexers. An IMA link transmitter provides one or more flows from an IMA sublayer to the physical layer. The physical layer functions are grouped into the TC layer and the Physical Media Dependent (PMD) sublayer. Each IMA sublayer flow matches the ATM transfer characteristic (e.g., cell delay and rate) provided by the physical layers at each end of a link. A link's physical layer will process received ATM cells to provide one or more flows from the physical layer to the IMA sublayer).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai's system/method by incorporating the steps of atm nodes using different rates at different links for cell transmission as suggested by Counterman. The motivation is that being able to support multiple rates on multiple physical connections give flexibility to communicating nodes to meet their varying Qos requirements; thus making the system robust and efficient.

In regards to claim 2, Cai and Counterman teach a method according to claim 1, comprising multiplexing of data in Common Part Sublayer packets from the same originating user upstream to the low-bit-rate (Counterman: Table 1, column 1 lines 8-10 and column 6 lines 34-47) artery and demultiplexing Common Part Sublayer packets downstream from the low-bit-rate (Counterman: Table 1, column 1 lines 8-10 and column 6 lines 34-47) artery (Cai: columns 5-6 lines 40-20).

In regards to claim 4, Cai, Conterman, Morikawa and Agarwal do not explicitly teach using AAL2 protocol.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai, Counterman, Morikawa and Agarwal's system/method by incorporating the steps of using AAL2 protocol. The motivation is that, AAL2 protocol is for efficient when transmitting voice related data and it would be obvious to choose a standard protocol, which suits the network requirement, the best.

In regards to claim 5, Cai and Agarwal teaches the packet of application data is formed of a fixed number of successive coded (Agarwal: columns 6-7 lines 54-11) frames, and the Common Part Sublayer packet (AAL5) is formed of the Application data packet and a header (Cai: columns 5-6 lines 40-20).

In regards to claim 6, Cai, Conterman, Morikawa and Agarwal do not explicitly teach using AAL1 protocol.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai, Counterman, Morikawa and Agarwal's system/method by incorporating the steps of using AAL1 protocol. The motivation is

that, AAL1 protocol is for efficient when transmitting fixed data and it would be obvious to choose a standard protocol, which suits the network requirement, the best.

In regards to claim 7 Cai and Counterman teach downstream from the low-bit-rate (Counterman: Table 1, column 1 lines 8-10 and column 6 lines 34-47) artery, if the downstream end of the artery corresponds to the upstream end of an additional low-bit-rate (Counterman: Table 1, column 1 lines 8-10 and column 6 lines 34-47) artery, repeating the actions of multiplexing the Common Part Sublayer packets from different originating users in a basic transmission unit of a virtual circuit set up between the first end and second end of the additional low-bit-rate(Counterman: Table 1, column 1 lines 8-10 and column 6 lines 34-47) artery, and sending the basic transmission unit of the virtual circuit from the first end to the second end of the additional low-bit-rate(Counterman: Table 1, column 1 lines 8-10 and column 6 lines 34-47) artery (Cai: columns 5-6 lines 40-20).

In regards to claim 8, Cai and Agarwal teach at the level of addressee user extracting the coded (Agarwal: columns 6-7 lines 54-11) frames from Common Part Sublayer packet and recreating the data for addressee user (Cai: columns 5-6 lines 40-20).

In regards to claim 10, Cai teaches transporting digital voice (column 1 line 48).

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cai, Counterman, Morikawa and Agarwal as applied to claim 1 above, and further in view of Stacey et al. (US PAT 6590909, hereinafter Stacey).

Cai, Counterman, Morikawa and Agarwal teach multiplexing technique as described in the rejections of claim 1 above.

Cai, Counterman, Morikawa and Agarwal do not each the use of a UUI field to provide error checking.

Stacey in the same field of endeavor teaches error checking using UUI (See fig 6). .

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Cai, Counterman, Morikawa and Agarwal's system/method with error checking via the use of UUI in light of the teachings of Stacey in order to provide for a secure channel.

5. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cai et al. (US PAT 6134246, hereinafter Cai) in view of Counterman (US PAT 6222858).

In regards to claim 11, Cai teaches a device (Figures 4, 5 and 6, ATM switch 20) for data transmission between at least two users in a communications network (Figures 4, 5 and 6, ATM network) comprising one or more standard-bit-rate arteries (Figures 4, 5 and 6, T1 communication links 40), the-network comprising a basic transmission unit (ATM cell), and supporting at least one adaptation layer protocol (column 5 line 53, AAL5), wherein tile device comprises at least one multiplexer device (Figures 4, 5 and 6, ATM switch 20) having a packetization (ATM or AAL5 packetizaiton) function and a switching function (Figures 4, 5 and 6, ATM switch 20), wherein the switching function

of the multiplexer device is adapted to the switching of packets conveyed in the basic transmission units according to the adaptation layer protocol among several virtual lines constituted by connections in multiplexed or non-multiplexed mode (column 5 lines 46-67, ATM cells are received by the first ATM switch, such as Samsung STARacer ATM switch, over an OC-3 communication link 30. A routing table (RT) 300 then forwards the received ATM cells to a first Segmentation and Re-assembly (SAR) module or chip 310. A first application module 330 associated with the SAR module 310 then assembles the cells into an AAL5 packet and performs a CRC32 check. If the assemble packet is a "good" packet, the SAR module 310 then interrupts an associated central processing unit (CPU) 320 and places the assembled AAL5 packet into a first designated memory location 340. The CPU 320 then adds a sequence number to the placed Protocol Data User (PDU) or AAL5 packet and selects a T1 communication link 40 to communicate the packet. While selecting an outgoing communication link, the CPU selects a T1 link with the lowest traffic load using a load-balancing algorithm. The PDU or AAL5 packet with the sequence number stored therein is then communicated back down to the SAR module 310. The SAR module 310 de-assembles the user packet into a number of ATM cells and communicates all of the de-assembled ATM cells associated with the particular user packet over the selected T-1 communication link 40).

Cai does not explicitly teach each link between the two atm nodes have different bit rates (higher and lower).

Counterman in the same field of endeavor teaches links can be of variable rate between the atm nodes (Table 1, column 1 lines 8-10 and column 6 lines 34-47, inverse multiplexing for Asynchronous Transfer Mode ("ATM") over communication links with different transmission rates and/or delays. The flows 254 in an IMA group may have different nominal cell rates, but have the same nominal cell transfer delay, in order for the corresponding IMA virtual link 250 to meet the desired QoS objective. A link 258 carries one or more flows over a physical path between inverse multiplexers. An IMA link transmitter provides one or more flows from an IMA sublayer to the physical layer. The physical layer functions are grouped into the TC layer and the Physical Media Dependent (PMD) sublayer. Each IMA sublayer flow matches the ATM transfer characteristic (e.g., cell delay and rate) provided by the physical layers at each end of a link. A link's physical layer will process received ATM cells to provide one or more flows from the physical layer to the IMA sublayer).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai's system/method by incorporating the steps of atm nodes using different rates at different links for cell transmission as suggested by Counterman. The motivation is that being able to support multiple rates on multiple physical connections give flexibility to communicating nodes to meet their varying Qos requirements; thus making the system robust and efficient.

In regards to claims 15 and 16 Cai teaches a network (Figures 4, 5 and 6, ATM network) to convey data in a connection between at least two users, the network comprising one or more standard-bit-rate arteries (Figures 4, 5 and 6, T1

communication links 40), at least one adaptation layer protocol (column 5 line 53, AAL5) and one basic transmission unit (ATM cell), wherein tile network comprises at least one device (Figures 4, 5 and 6, ATM switch 20) comprising at least one multiplexer device (Figures 4, 5 and 6, ATM switch 20) having a packetization function (ATM or AAL5 packetizaiton) and a switching function, (Figures 4, 5 and 6, ATM switch 20) wherein the switching function of the multiplexer device is adapted to the switching of packets conveyed in the basic transmission units according to the adaptation layer protocol among several virtual lines constituted by connections in multiplexed or non-multiplexed mode, this device being positioned upstream to and downstream from a low-bit-rate artery (column 5 lines 46-67, ATM cells are received by the first ATM switch, such as Samsung STARacer ATM switch, over an OC-3 communication link 30. A routing table (RT) 300 then forwards the received ATM cells to a first Segmentation and Re-assembly (SAR) module or chip 310. A first application module 330 associated with the SAR module 310 then assembles the cells into an AAL5 packet and performs a CRC32 check. If the assemble packet is a "good" packet, the SAR module 310 then interrupts an associated central processing unit (CPU) 320 and places the assembled AAL5 packet into a first designated memory location 340. The CPU 320 then adds a sequence number to the placed Protocol Data User (PDU) or AAL5 packet and selects a T1 communication link 40 to communicate the packet. While selecting an outgoing communication link, the CPU selects a T1 link with the lowest traffic load using a load-balancing algorithm. The PDU or AAL5 packet with the sequence number stored therein is then communicated back down to the SAR module 310. The SAR module

310 de-assembles the user packet into a number of ATM cells and communicates all of the de-assembled ATM cells associated with the particular user packet over the selected T-1 communication link 40).

Cai does not explicitly teach each link between the two atm nodes have different bit rates (higher and lower).

Counterman in the same field of endeavor teaches links can be of variable rate between the atm nodes (Table 1, column 1 lines 8-10 and column 6 lines 34-47, inverse multiplexing for Asynchronous Transfer Mode ("ATM") over communication links with different transmission rates and/or delays. The flows 254 in an IMA group may have different nominal cell rates, but have the same nominal cell transfer delay, in order for the corresponding IMA virtual link 250 to meet the desired QoS objective. A link 258 carries one or more flows over a physical path between inverse multiplexers. An IMA link transmitter provides one or more flows from an IMA sublayer to the physical layer. The physical layer functions are grouped into the TC layer and the Physical Media Dependent (PMD) sublayer. Each IMA sublayer flow matches the ATM transfer characteristic (e.g., cell delay and rate) provided by the physical layers at each end of a link. A link's physical layer will process received ATM cells to provide one or more flows from the physical layer to the IMA sublayer).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai's system/method by incorporating the steps of atm nodes using different rates at different links for cell transmission as suggested by Counterman. The motivation is that being able to support multiple rates on multiple

physical connections give flexibility to communicating nodes to meet their varying Qos requirements; thus making the system robust and efficient.

In regards to claim 12, Cai and Counterman teaches a shuffler (Counterman: Figure 4, IMA group 252) to transmit a basic transmission unit (AAL5) to the multiplexer and carry out a transparent switching of the units that do not have to travel through a low-bit-rate artery, wherein the packetization funciton is configured to extract the packets from the basic transmissión units (Cai: columns 5-6 lines 40-20) intended to travel through a low-bit-rate artery and for packetization of the packets in new basic transmission units in multiplexed mode for each virtual low-bit-rate artery, and a table adapted for determining the artery over which the packets in the basic transmission units are intended to travel (Counerman: Table 1, column 1 lines 8-10 and column 6 lines 34-47, inverse multiplexing for Asynchronous Transfer Mode ("ATM") over communication links with different transmission rates and/or delays. The flows 254 in an IMA group may have different nominal cell rates, but have the same nominal cell transfer delay, in order for the corresponding IMA virtual link 250 to meet the desired QoS objective. A link 258 carries one or more flows over a physical path between inverse multiplexers. An IMA link transmitter provides one or more flows from an IMA sublayer to the physical layer. The physical layer functions are grouped into the TC layer and the Physical Media Dependent (PMD) sublayer. Each IMA sublayer flow matches the ATM transfer characteristic (e.g., cell delay and rate) provided by the physical layers at each end of a link. A link's physical layer will process received ATM cells to provide one or more flows from the physical layer to the IMA sublayer).

In regards to claim 13, Cai and Conterman do not explicitly teach using AAL2 protocol.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai and Counterman's system/method by incorporating the steps of using AAL2 protocol. The motivation is that, AAL2 protocol is for efficient when transmitting voice related data and it would be obvious to choose a standard protocol, which suits the network requirement, the best.

In regards to claim 14, Cai and Conterman teach device is an ATM switch equipped with a multiplexer whose role is configured to switch Common Part Sublayer packets among several virtual arteries constituted by ATM connections in multiplexed or non-multiplexed (Cai: columns 5-6 lines 40-20).

In regards to claim 14 Cai and Conterman do not explicitly teach using AAL2 protocol.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Cai and Counterman's system/method by incorporating the steps of using AAL2 protocol. The motivation is that, AAL2 protocol is for efficient when transmitting voice related data and it would be obvious to choose a standard protocol, which suits the network requirement, the best.

Response to Arguments

6. Applicant's arguments, see pages 9-13 of the Remarks section, filed 12/29/2006, have been fully considered.

35 USC 112

Applicant's arguments, see paragraph 3 of page 9 of the Remarks section, with respect to the 35 USC 112 rejection to the claims have been fully considered and are persuasive. The 35 USC 112 rejection to the claims has been withdrawn.

35 USC 103

Applicant's arguments see pages 9-13 of the Remarks section, with respect to the 35 USC 103 rejection to the claims have been fully considered. Applicant has amended claims 1, 2 and 4-16 and added a new claim 17. Applicant's amendment of claims 1, 2 and 4-16 and addition of new claim 17 necessitated a new ground of rejection presented in this office action. As such any response to Applicant's argument is moot.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571) 272-8307. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SA
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